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EXAMINER

PHAM, THOMAS K

ART UNIT	PAPER NUMBER
2121	7

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

SK

Office Action Summary

Application No.

09/845,361

Applicant(s)

NAKAI ET AL.

Examiner

Thomas K Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. This action is in response to the amendment filed on 1/23/2004.
2. New claim 16 filed by the applicant has been entered.
3. Applicant's amendment necessitated the new ground(s) of rejection presented in the following Office action.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson et al. U.S. Patent no. 5,623,592 (hereinafter Carlson) in view of Takizawa et al. U.S. Patent no. 5,565,748 (hereinafter Takizawa).

Regarding claim 1

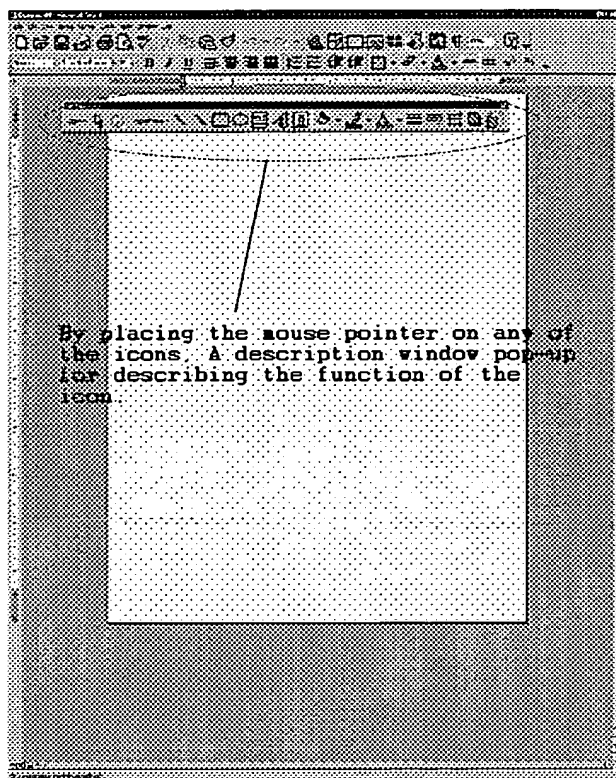
Carlson teaches a system comprising: a controller (fig. 1, element 116); a monitor connected with said controller (fig. 1, element 118); at least one object to be controlled, said object connected with said controller (fig. 1, elements 104, 106, 108 and 110); development means for developing a program for said object (col. 7 lines 26-45, "a user first ... the selected instrument."); implementing means for implementing the program developed by said development means (col. 12 lines 47-51, "computer 102 sends ... the icon sequence.") but does

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not specifically teach a software module uniquely assigned to said object, wherein the software module is automatically linked to the development means based on information stored on the object, said software module providing at least one of a description procedure used in said development means for describing a control process for said object. However, Takizawa teaches a software module that contains information uniquely assigned to the object (abstract) **wherein the software module is automatically link all the selected modules during development means to the external devices according to the information stored on each object (col. 9 lines 49-55, "the selected modules are selectively ... arrangement defined by the operator")**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the software module of Takizawa with the system of Carlson because the Carlson process control would not be possible without the unique software module that interfaces between the controller and external devices. Furthermore, it would have been obvious to one of ordinary skill in the art to have at least a description procedure for the control process associated with the icons. Example 1 below shown a typical Microsoft Word for Windows in a draw mode where a pop-up description window appear for each of the icons shown in the tool bar when a computer mouse navigate over the icons similar to the description procedure as claimed.

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Example 1:

Regarding claim 2

Takizawa teaches a software module that contains information uniquely identifying the object (abstract).

Regarding claim 4

Carlson teaches the software module is stored within a database server connected with said development means through a communication bus so that said development means acquires said software module from the database server (col. 9 lines 47-55, "a storage location ... with database icon 248.").

Regarding claim 5

Carlson teaches the development means provides a display area on the monitor, in which at least

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one icon is displayed, the icon representing one of said object connected to said controller and an object to be connected to said controller (col. 7 lines 11-15, "Once a copy ... must be established.").

Regarding claim 6

Carlson teaches the icon procedure displays a plurality of icons in the display area on said monitor, each icon illustrating current status of said object (col. 8 lines 31-35, "the controls in ... types of instruments.").

Regarding claim 7

Carlson teaches the development means provides a development area on said monitor, and a user copies the icon from the display area onto the development area, thereby developing the program (col. 6 lines 57-64, "To begin the ... design region 206.").

Regarding claim 8

Carlson teaches when the software module provides the description procedure, the user utilizes the description procedure for describing a control process for said object determining operation of said object, thereby developing the program (col. 12 lines 27-41, "The particular icons ... specified instruments.").

Regarding claim 9

Carlson teaches the icon procedure displays a plurality of icons in the display area on said monitor, each icon illustrating operation of said object (col. 12 lines 33-41, "Each icon on ... specified instruments.").

Regarding claim 10

Carlson teaches the user connect s a plurality of the icons with each other to form a flowchart in

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the development area, thereby developing the program (col. 13 lines 23-30, "Assuming a left-to-right ... operation icon OIC3.").

Regarding claim 11

Carlson teaches the development means displays the icons in the display area, and simulates operation of said object while execution of the program is simulated, whereby the monitor is used for displaying simulation of said object (col. 6 lines 9-16, "a computer may ... a textual indicators.").

Regarding claim 12

Carlson teaches the development means displays the icons in the display area, illustrates the operation of said object while said implementing means implements the program, whereby the monitor is used for displaying operation of said object (col. 12 lines 47-51, "computer 102 sends ... the icon sequence.").

Regarding claim 15

Carlson teaches a storage medium storing a computer program for execution on a system which comprises a controller (fig. 1, element 116), a monitor connected to said controller (fig. 1, element 118), at least one object to be controlled, said object being connected to said controller (fig. 1, elements 104, 106, 108 and 110), development means for developing a program for said controlled object (col. 7 lines 26-45, "a user first ... the selected instrument."), implementing means for implementing the program developed by said development means (col. 12 lines 47-51, "computer 102 sends ... the icon sequence."), in which said development means provides a display area on the monitor, in which at least one icon is displayed, the icon representing one of said object connected to said controller and an object to be connected to said controller (col. 7

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lines 11-15, "Once a copy ... must be established."); said development means provides a development area on said monitor (col. 6 lines 21-31, "Referring now to FIG. 2 ... by the user."); and the icon is copied from the display area onto the development area, thereby developing an application program (col. 6 lines 36-40, "A user designs ... experimental flow") but does not teach a software module uniquely assigned to said object, wherein the software module is automatically linked to the development means based on information stored on the object, said software module including an icon procedure for displaying an icon for said object in a display area on said monitor, a description procedure for describing a control process for said object, and an implementing procedure for implementing the control process developed for said object, said system including said object including at least one device, in which said development means acquires and identifies the software module with the global unique ID. However, Takizawa teaches a software module that contains information uniquely identifying the object (abstract), **wherein the software module is automatically link all the selected modules during development means to the external devices according to the information stored on each object** (col. 9 lines 49-55, "the selected modules are selectively ... arrangement defined by the operator"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the software module of Takizawa with the system of Carlson because the Carlson process control would not be possible without the unique software module that interfaces between the controller and external devices and to provide for associating each icon with each of the external devices in order to uniquely and accurately control the whole simulated process. Furthermore, it would have been obvious to one of ordinary skill in the art to have at least a description procedure for the control process associated with the icons. Example 1

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above shown a typical Microsoft Word for Windows in a draw mode where a pop-up description window appear for each of the icons shown in the tool bar when the computer mouse navigate over the icons similar to the description procedure as claimed.

Regarding claim 16

Carlson teaches the software module further providing an icon procedure for displaying an icon for said object in a display area on said monitor (col. 6 lines 32-40, "Icon bar 204 includes ... the desired experimental flow").

3. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson in view of Takizawa and further in view of Kodosky et al. U.S. Patent no. 6,173,438 (hereinafter Kodosky).

Regarding claim 3

Carlson and Takizawa teach the system with a development means acquires the software module but does not teach the software module is stored within said object so that said development means acquires said software module from said controlled object. However, Kodosky teaches the software module is stored within embedded memory of the embedded system (object) so that said development means acquires said software module from said controlled object (col. 11 lines 34-39, "The embedded memory ... automation function."). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the software module storing technique of Kodosky with the system of Carlson and Takizawa because it would provide for faster accessing of the codes since it had already compiled into machine language.

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Regarding claim 13

Carlson and Takizawa teach the system for developing an application system but does not teach implementing means sends messages to and/or receives messages from said object according to the program developed. However, Kodosky teaches the bi-directional interface between the host computer and the embedded system where embedded system returns messages to the host computer according to the program developed (col. 17 lines 1-10, "the embedded system ... the graphical program."). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bi-directional interface of Kodosky with the system of Carlson and Takizawa because it would provide for communicating bi-directionally between the controller and external devices in order to maximize simulation of the controlling process.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson in view of Takizawa and further in view of Kang. U.S. Patent no. 6,279,049.

Regarding claim 14

Carlson and Takizawa teach the system for developing an application system with the object is connected to said controller through an interface but does not teach the interface including at least one of a Plug and Play function and a Hot Plug function. However, Kang teaches a Universal Serial Bus (USB) and/or the IEEE1394 interfaces are capable of having hot plug-and-play functions (col. 4 lines 11-15, "Namely, the USB ... a monitor relevance."). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the USB or IEEE1394 interface of Kodosky with the system of Carlson and

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Takizawa because it would provide for having at least a Hot Plug or Hot Plug and Play functionality in order to aid operator of the system in the set up process without shut down any part of the system.

Response to Arguments

In the remark the applicant argues that cited reference fails to disclose:

- I) “software module is automatically linked to the development means based on information stored on the object” as to claims 1 and 15.
- II) “software module providing at least one of a description procedure used in said development means for describing a control process for said object” as to claims 1 and 15.

In response to applicant’s argument:

- I) It was noted that prior art (Takizawa et al. U.S. Patent no. 5,565,748) teaches (column 9 lines 52-55, “once the completed system is defined, the combined modules and their related information are used to automatically create a control program that emulates the operation of a machine having the arrangement defined by the operator”). Therefore, it is clear that the software module is automatically link all the selected modules during development means to the external devices according to the information stored on each object. Thus, limitations are met by the reference.
- II) An example is provided (see Example 1 figure above) to show the well known feature of a description procedure associate with each of the object where in a typical Microsoft Word for Windows draw mode, a pop-up description window appear for each of the icons shown in the tool bar when a computer mouse navigate over the icons similar to the description procedure as claimed. Therefore, limitations are met by the reference.

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Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner *Thomas Pham*; whose telephone number is (703) 305-7587 and fax number is (703) 746-8874, Monday-Thursday and every other Friday from 7:30AM- 5:00PM EST or contact Supervisor *Mr. Anil Khatri* at (703) 305-0282.

Any response to this office action should be mailed to: **Director of Patents and Trademarks Washington, D.C. 20231**, or **Hand-delivered** responses should be brought to **Crystal Park II, 2121 Crystal Drive Arlington, Virginia, (Receptionist located on the 4th floor)**, or fax to the **official fax number (703) 872- 9306**.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Thomas Pham
Patent Examiner

TP

April 3, 2004

Ramesh Patel
RAMESH PATEL
PRIMARY EXAMINER 4/5/04
For Anil Khatri